If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A.

C-A OPERATIONS PROCEDURES MANUAL

7.1.47 Cold Turbine "B" Train Start Up After Unscheduled Shutdown of "A" Train

Text Pages 2 through 3

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Approved: _____***Signature on File***_____ _____
Collider-Accelerator Department Chairman Date

C. Salat

7.1.47 Cold Turbine "B" Train Start Up After Unscheduled Shutdown of "A" Train

1. Purpose

Instruction provision for placing cold turbine "B" train online with cold turbine "A" train shutdown and unavailable.

2. Responsibilities

2.1 The Shift Supervisor, or an operator designated by the Shift Supervisor, is responsible for conducting this procedure and for providing documentation in the Cryogenic Control Room Log.

22 Operators shall become familiar with RHIC Cold Expanders 5 and 6 System Schematic P & ID 3A995117, and RHIC Cryogenic 25 kw Helium Refrigerator P & ID 3A995009, and the physical location of components described herein.

2.3 Should a problem arise during the completion of this procedure, the Shift Supervisor shall contact the Technical Supervisor for instruction before continuing.

3. Prerequisites

3.1 It has been determined that the "A" train cannot be restarted without considerable time and effort taken. i.e. turbine removal.

3.2 "B" train has been regenerated and is available for use.

3.3 All other operating parameters are in compliance with train operation.

4. Precautions

4.1 If 1005R is posted ODH 1, all personnel entering must be ODH class 1 qualified, or escorted by a qualified entrant. All personnel must use a personal oxygen monitor and carry an emergency escape pack.

5. Procedure

5.1 Date_____.

5.2 Place valve H159A in manual mode at 100% open.

5.3 Place balance heat exchanger valves H406A & H806A in manual mode at 100% closed.

5.4 Initialize cold turbines 5/B & 6/B as per C-A-OPM 7.1.43. Note some steps are

redundant due to adjacent string being online.

5.5 Open turbine string outlet valve H810M. With the inlet gas temperature to the turbine & return gas already cold, coupled with the efficiency of the turbine string to cool down quickly, any return bypasses should be unnecessary.

5.6 Ensure open HX7B return valve H798M.

5.7 Start turbines.

5.8 Slowly open balance HX7B inlet valve H806A to 100% in manual mode.

5.9 Place valve H159A at 50% in manual mode. To expedite cooling of HX7B, valve can be set at a lower opening value, but attention should be paid to pot return pressure.

5.10 When the delta T between TI804 & TI31 is less than 10K, and the delta T between TI789 & TI800 is within 10K, and string outlet temperature is under 12K, place balance HX logic in automatic mode.

5.11 Secure cold turbine 5A/6A oil skid as per C-A-OPM 7.1.49, "Shutdown of the Cold Turbine Oil Skid"..

6. Documentation

6.1 The Shift Supervisor shall document the completion of the procedure in the Cryogenics Control Room Log.

7. References

None.

8. Attachments

None